

Saudi Practice of Consuming *Terfezia claveryi* truffles intended for Treating Eye Pathogens

Sherifa Mostafa M. S

Techno. and Sci. Dept., Ranyah University College, Taif U., KSA.

*Corresponding Author: Sherifa Mostafa M. Sabra. Techno. and Sci. Dept., Ranyah University College, Taif U., KSA.

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Abstract

Saudi *Terfezia claveryi* truffles common name is Al Fag'a, Al-Kam'ah is the classic Arabic name, which means "hidden". It has gained attention due to aroma for culinary use and high nutritional content. The goal was to prove that the Saudi custom for Saudi *Terfezia claveryi* truffles is scientifically correct through the procedure and proving that the basic components have a role in eliminating eye pathogens. Methodology was included preparing the sample for the experiment, preparing microbial isolates for the experiment and the experiment under investigation. The results showed that the Saudi *Terfezia claveryi* truffles water extract was highly effective against bacteria and fungi eye pathogens. That was found the most effective on them were *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Micrococcus flavus*, *Pseudomonas aeruginosa*, *Proteus mirabilis*, *Chlamydia trachomatis*, and *Candida sp.*, except for *Aspergillus sp.* Saudi *Terfezia claveryi* truffles water extract effects through the means were (0.0082-0.0094) as grade A were included *Staphylococcus aureus*, and *Streptococcus pneumoniae*. While grade B were included *Micrococcus flavus*, *Pseudomonas aeruginosa*, and *Proteus mirabilis*, their means were (0.0188-0.0216). The grade C were included *Chlamydia trachomatis*, and *Candida sp.*, their means was (0.0266-0.0294). Although *Aspergillus sp.*, was under test but was not reacted with the water extract. That concluded the Saudi habit of using Saudi *Terfezia claveryi* truffles had been proven experimentally due to the antimicrobial substances in its contents, that affect the eye pathogens. That was recommended that the Saudi *Terfezia claveryi* truffles must be directed to the pharmacy department to obtain the appropriate medication to treat eye pathogens.

Key Words: *saudi terfezia claveryi* truffles; *staphylococcus aureus*; *streptococcus pneumoniae*; *micrococcus flavus*; *pseudomonas aeruginosa*; *proteus mirabilis*; *chlamydia trachomatis*; *candida sp.*; *aspergillus sp*

Introduction

Saudi *Terfezia claveryi* truffles common name is Al Fag'a, Al-Kam'ah is the classic Arabic name, which means "hidden". It has gained attention due to aroma for culinary use and high nutritional content [1]. Saudi *Terfezia claveryi* truffles has antimicrobial effects by main contents are Volatile terpenoids, volatile organic compounds associated with the aroma, phenolic compounds, extracellular enzyme, sterols and triterpenes, pheromones, saturated fatty derivatives, unsaturated fatty acids, and peptides [2]. Saudi *Terfezia claveryi* truffles has contents make antimicrobial activity as microbial growth inhibition, protein synthesis inhibition, blocking any process of the protein synthesis pathway, suppress pathogens and act as signaling molecules during microorganism interaction. killing of invading microorganisms by activated phagocytic cells. Damage the bacterial membrane, inhibition of virulence factors, cell membrane destruction uses their lipophilicity. Anti-quorum sensing action, is an intercellular

communication system. Inhibition of ATP and its enzyme, is the most direct energy source in organisms, and necessary element for pathogens to maintain normal operation and work. The polar solvent water extract, production of low molecular weight peptide antibiotics [2]. Saudi *Terfezia claveryi* truffles has bioactivity characterization of harvested focused on the antibacterial and antifungal developing. The medicinal source of antibacterial, antimicrobial activity with broad-spectrum effects and immune stimulating properties [3]. Saudi *Terfezia claveryi* truffles has antimicrobial, and anti-inflammatory activities, strong antibacterial and antifungal, use for medicinal purposes in clinics [4]. Saudi *Terfezia claveryi* truffles has effects against eye pathogens of bacterial and fungal origin and by a Muslim religious Hadith. "Truffles are like Manna, and their water heals eye diseases" (PBUH Sahih al-Bukhari 5708) [5]. Saudi *Terfezia claveryi* truffles used for treating ophthalmic infections in traditional medicine. It provides further insight into the use of the water extracts in the prevention or treatment of ocular infections [6].

Saudi *Terfezia clavervyi* truffles is a source of therapeutic compounds. It has antimicrobial useful in the treatment of ophthalmic ailments. It was used for ocular infections, as alternatives to currently used antibiotics. has been employed in traditional/folk medicine in Arab communities. The Bedouins recommend the use of its water extracts for the treatment of common eye infections [2]. Saudi *Terfezia clavervyi* truffles had been careful between old actions for ocular contagions and illnesses. It was used as antimicrobial from Saudi Arabia. The water extracts were proved an antibacterial biofilm activity. That potent activity was in contradiction of *Staphylococcus aureus*, also *Pseudomonas aeruginosa* [2]. Saudi *Terfezia clavervyi* truffles has antimicrobial effects against pathogens related with eye contagions. The water extract, to determine an antimicrobial mechanism their fractions against *Staphylococcus aureus*, *Pseudomonas* sp., *Proteus mirabilis*, and *Micrococcus* sp., were isolated from patients with ocular infections. All isolates were susceptible to the water extracts / fractions. SEM imaging showed morphological alterations in Staphylococcal species. That was exhibited significant antimicrobial activity, also potential source of future antibiotic [2]. Saudi *Terfezia clavervyi* truffles water extracts were effective against clinical isolates of MRSA and *Pseudomonas aeruginosa*, that curing trachoma disease and treatment of cornea infection [7]. Saudi *Terfezia clavervyi* truffles water extract presented growth reserved of the trachoma pathogens, *Chlamydia trachomatis*. An antimicrobial activity was verified against *Staphylococcus aureus*, also *Pseudomonas aeruginosa*. Its strong antimicrobial against bacteria, giving ophthalmic contagions, was existed in the water extract [2]. Saudi *Terfezia clavervyi* truffles water extract was used in treatment the infected eye by *Streptococcus pneumoniae*, was cast-off as an antibacterial mediator [1]. Saudi *Terfezia clavervyi* truffles has antibacterial activity was also demonstrated for *Micrococcus flavus*. Saudi *Terfezia clavervyi* truffles source of anti-infective agents. An antimicrobial action of the water extracts in contradiction of *Staphylococcus aureus*, also *Pseudomonas aeruginosa*. The water extract showed actual bactericidal against all tested pathogens [2]. The important was on the Saudi customs must be taken an advantage of Saudi *Terfezia clavervyi* truffles. The plant has been used for a long time and has proven successful in the herbal treatment of eye diseases. The goal was to prove that the Saudi custom for Saudi *Terfezia clavervyi* truffles was scientifically correct through the procedure and proving that the basic components have a role in eliminating eye pathogens.

The methodology was to conduct research in a practical way by Saudi *Terfezia clavervyi* truffles was extracted the active substances and were tested on the eye pathogens.

Methodology:

Preparing the sample for the experiment:

- Saudi *Terfezia clavervyi* truffles was obtained from the market.
- The fine powder 100 grams were soaked in distilled water in 1:3 relative, for 48 hours at 4°C. The solution was regulated, then was cleaned via cotton. The filtrate was centrifuged at 3000 rpm /m for 10 min. The supernatant was collected and labeled as crude of the water extracts.
- The dilutions were made by the distilled water according (V:V), that were (1:1, 1:2, 1:3, 1:4, and 1:5) [8].

Preparing of the eye pathogens for the experiment:

- They were collected from the personal laboratory, were isolated and classified from an inflammation of the eye's patients.
- They were covered (*Staphylococcus aureus*, *Streptococcus pneumoniae*, *Micrococcus flavus*, *Pseudomonas aeruginosa*, *Proteus mirabilis*, *Chlamydia trachomatis*, *Candida* sp., and *Aspergillus* sp.).
- The eye pathogens development was carried on specialized ready-made media at 35-37°C for 12-18 hours. The growth was transferred to enriched broth at 35-37°C for 6-8 hours [9].

The experiment under investigation:

- The sterile topped bottles were prepared, were three tubes for each test.
- One ml of the water extract dilution was added, one ml of liquid culture was added, was mixed manually, was incubated at 35-37°C for 24 hours.
- The growth was mixed, culture loopful was transferred to enriched broth for 24 hours at 35-37°C. Estimation the growing cells dry weight after exposure.
- The results data was used by statistics to get the result table [10].

Results and discussion:

Eye pathogens	Dilutions V:V					Means	Grades
	1:1	1:2	1:3	1:4	1:5		
	Dry weight by gram						
<i>Staphylococcus aureus</i>	0.002	0.005	0.007	0.011	0.016	0.0082	A
<i>Streptococcus pneumoniae</i>	0.003	0.006	0.007	0.013	0.018	0.0094	A
<i>Micrococcus flavus</i>	0.008	0.012	0.017	0.023	0.034	0.0188	B
<i>Pseudomonas aeruginosa</i>	0.009	0.014	0.021	0.026	0.036	0.0216	B
<i>Proteus mirabilis</i>	0.009	0.013	0.020	0.026	0.035	0.0206	B
<i>Chlamydia trachomatis</i>	0.014	0.019	0.027	0.031	0.042	0.0266	C
<i>Candida</i> sp.	0.016	0.022	0.030	0.034	0.045	0.0294	C
<i>Aspergillus</i> sp.	--	--	--	--	--		Non reacted

Table 1: The effect of Saudi *Terfezia clavervyi* truffles water extract on eye pathogens

Table 1 cleared the effect of Saudi *Terfezia clavervyi* truffles water extract on eye pathogens. The results showed that the Saudi *Terfezia clavervyi* truffles water extract was highly effective against bacteria and fungi pathogens were isolated from infected eyes. That was found the most effective on them were *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Micrococcus flavus*, *Pseudomonas aeruginosa*, *Proteus mirabilis*, *Chlamydia trachomatis*, and *Candida* sp., except for *Aspergillus* sp., was non reacted [1-7].

Saudi *Terfezia clavervyi* truffles water extract effects resulted the means were (0.0082-0.0094) had the grade (A) were included *Staphylococcus aureus*, and *Streptococcus pneumoniae*. While the grade (B) was included *Micrococcus flavus*, *Pseudomonas aeruginosa*, and *Proteus mirabilis*, their means were (0.0188-0.0216). The grad (C) was included *Chlamydia trachomatis*, and *Candida* sp., their means was (0.0266-0.0294). but pathogen *Aspergillus* sp., was under the test but was not reacted with the Saudi *Terfezia clavervyi* truffles water extract [1-7].

Saudi *Terfezia claveryi* truffles water extract showed an extent of the extract's effect on all eye pathogens became clear, which was confirmed the extent of the material's ability to eliminate mostly all eye pathogens under test [1-7].

Therefore, Saudi *Terfezia claveryi* truffles water extract was found that the Saudi custom of use it was kind to herbal use, and now, after conducting the effect of main contents as practical part. It was proven that the main component of the Saudi *Terfezia claveryi* truffles had the ability to eliminate eye pathogens [1-7].

Conclusions:

It was decided that the Saudi habit of using Saudi *Terfezia claveryi* truffles water extract had been proven experimentally due to the antimicrobial substances in its contents, that was affected on the eye pathogens.

Recommendations:

It was recommended that the Saudi *Terfezia claveryi* truffles water extract must be directed to the pharmacy department to obtain the appropriate medication to treat eye pathogens.

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References:

1. Veeraraghavan, V. P., Hussain, S., Papayya Balakrishna, J., Dhawale, L., Kullappan, M., et. al., (2022). A comprehensive and critical review on ethnopharmacological importance of desert truffles: *Terfezia claveryi*, *Terfezia boudieri*, and *Tirmania nivea*. *Food Reviews International*, 38(sup1), 846-865.
2. Khojah, H. M., Abdelhalim, O. B., Mostafa, M. A., & Habib, E. S. E. (2022). Antimicrobial efficacy of extracts of Saudi Arabian desert *Terfezia claveryi* truffles. *Saudi Journal of Biological Sciences*, 29(11), 103462.
3. Mohamed-Benkada M, Achira DY, Ghareeb MA. (2024) Assessment of antimicrobial activity and mycelium insights of *Terfezia claveryi* truffle harvested from Tindouf desert. *Journal of Applied Pharmaceutical Science*. 14(2):161-73.
4. Veeraraghavan, V. P., Hussain, S., Papayya Balakrishna, J., Dhawale, L., Kullappan, M., et. al., (2022). A comprehensive and critical review on ethnopharmacological importance of desert truffles: *Terfezia claveryi*, *Terfezia boudieri*, and *Tirmania nivea*. *Food Reviews International*, 38(sup1), 846-865.
5. MOHAMED-BENKADA, Mustapha; ACHIRA, Djamel Youcef; GHAREEB, Mosad A. (2024), Assessment of antimicrobial activity and mycelium insights of *Terfezia claveryi* truffle harvested from Tindouf desert. *Journal of Applied Pharmaceutical Science*, 14.2: 161-173.
6. Elkhateeb, W. A., Soliman, A. A., Shaheen, M. N., Elmahdy, E. M., & Daba, G. M. (2024). Bioactive potentials of the truffle mushrooms *Tirmania nivea*, *Tirmania pinoyi* and *Tuber indicum*. *Egyptian Pharmaceutical Journal*, 23(1), 94-102.
7. Badger-Emeka, L. I., Emeka, P. M., Aldossari, S., & Khalil, H. E. (2020). *Terfezia claveryi* and *Terfezia boudieri* extracts: An antimicrobial and molecular assay on clinical isolates associated with eye infections. *Pharmacognosy Magazine*, 16(72).
8. Mawire, P., Mozirandi, W., Heydenreich, M., Chi, G. F., & Mukanganyama, S. (2021). Isolation and antimicrobial activities of phytochemicals from *Parinari curatellifolia* (Chrysobalanaceae). *Advances in Pharmacological and Pharmaceutical Sciences*, 2021, 1-18.
9. Ratajczak, M., Kaminska, D., Matuszewska, E., Holderna-Kedzia, E., Rogacki, J., & Matysiak, J. (2021). Promising antimicrobial properties of bioactive compounds from different honeybee products. *Molecules*, 26(13), 4007.
10. DALE, Jane C.; RUBY, Stephen G. (2003) Specimen collection volumes for laboratory tests: a College of American Pathologists study of 140 laboratories. *Archives of pathology & laboratory medicine*, 127.2: 162-168.



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